

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 December 2001 (27.12.2001)

PCT

(10) International Publication Number
WO 01/99088 A1

(51) International Patent Classification⁷: **G09F 3/00**

(21) International Application Number: **PCT/EP01/06464**

(22) International Filing Date: **7 June 2001 (07.06.2001)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
MI2000U000370 19 June 2000 (19.06.2000) IT

(71) Applicant (for all designated States except US): **SCIENCE PARK RAF S.P.A.** [IT/IT]; Via Olgettina, 60, I-20132 Milano (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BONINI,**

Pierangelo [IT/IT]; 8° Strada, 68, S. Felice, I-20068 Peschiera Borromeo (IT). **SANNA, Alberto** [IT/IT]; Via Passo Sella, 10, I-20134 Milano (IT). **PERINI, Giuliano** [IT/IT]; Vicolo Cordevole 11, I-31020 Fontane di Villorba (IT).

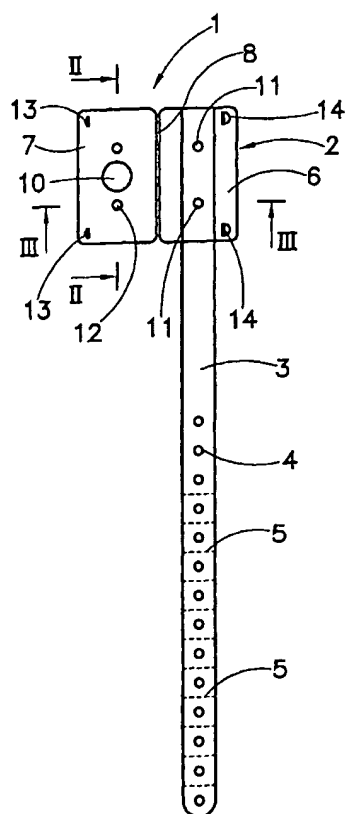
(74) Agent: **MITTLER, Enrico**; Mittler & C. s.r.l., Viale Lombardia, 20, I-20131 Milano (IT).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European

[Continued on next page]

(54) Title: **IDENTIFICATION WRIST-BAND FOR PATIENTS, SUITABLE TO BE USED IN HOSPITALS, NURSING HOMES AND SIMILAR**



(57) Abstract: An identification wrist-band for patients, suitable to be used in hospitals, nursing homes and similar, comprises a tag part (2) destined to the support of an identification code (9) of the patient and a part with flexible strip (3) that is fastenable in a permanent way around the wrist of patient and provided with a sequence of holes (4). The flexible strip (3) is made of soft material and it is provided with cross-sectional pre-fracture lines (5) between one and the other of the aforesaid holes (4). The tag part (2) is fixed to one end of said flexible strip (3) and it is made up of two parts (6, 7) that are closable by folding, in a permanent way, between which parts the other end of the flexible strip (3) is passed and fastened by means of at least one pin (11) inserted in one of said holes (4).

WO 01/99088 A1



patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

Declarations under Rule 4.17:

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation US
- of inventorship (Rule 4.17(iv)) for US only

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

"Identification wrist-band for patients, suitable to be used in hospitals, nursing homes and similar".

* * * * *

DESCRIPTION

5 The present invention concerns an identification wrist-band for patients, suitable to be used in hospitals, nursing homes and similar.

 As known, one of the systems recently adopted in the hospital field for the identification of patients provides to apply a permanent fastening wrist-band to the wrist of the patient (obviously for the time of the hospitalisation)
10 on which an identification code containing the main administrative and clinical data of the patient are reported, as expressed in a codified form for the automatic reading eventually integrated with data that are expressed for the direct reading on behalf of the operator (" human readable ").

 This system makes the automatic identification of the patient and its
15 clinical/administrative data in occasion of every operation either medical (for instance, collection of biological materials, therapeutic and diagnostic activities, etc), and administrative and of clinical hospitality (for instance the assignment of beds, in particular avoiding the possibility of errors due to the mistaking of a patient for another and incorrect interpretation of the same
20 data).

 The known identification wrist-bands are made up of a strip of thin but relatively rigid plastic material or of plasticised paper with similar characteristics, that has a portion with greater width, generally with rectangular shape, on which a code containing the data of the patient is
25 memorised by different ways, for instance a bar code or a two-dimensional code. The memorised code can be read and can be recognised by means of appropriate readers when necessary.

 For its fastening to the wrist of the patient the wrist-band provides a series of equidistant holes along the plastic strip and a coupling pin on the
30 opposite end, that is positioned in proximity of a foldable tongue. After

- 2 -

having wrapped the wrist-band around the wrist of the patient, the coupling pin gets engaged in one of the holes and the foldable tongue is then folded onto the pin, that gets inserted into a hole provided in the tongue. Finally everything is fastened by means of an self-locking plastic rivet. Once the fastening has been carried out, the end of the pierced part of the plastic strip that is left over from the coupling pin is then cut in order to prevent it from overlapping the zone that contains the identification code of the patient.

This known wrist-band shows some disadvantages, than can be thus synthesised.

In the first place a wrist-band made of plastic material that is rigid enough but very thin, and therefore in some ways relatively sharp, is not suitable to an application in the hospital field, where patients can find its application uncomfortable, especially in the presence of sores or local inflammation or other affections.

In addition the need to cut the exceeding part of the wrist-band by means of the use of scissors or other cutting tool is not a convenient practice in the field, in which, as it is known, any instrument or tool must be handled with the maximum care for the safeguard both of the patient as well as the staff.

Other wrist-bands utilisable in analogous way are described in European patent no. 0712525 and US patent no. 3.818.897.

Scope of the present invention is now to provide an identification wrist-band for patients of the type above described, that differs from the ones currently known in an easier and more comfortable application to the wrist of the patient.

According to the invention such scope is attained with a wrist-band comprising a tag portion that is destined to the support of an identification code of the patient and a flexible strip part that is fastenable in a permanent way around the wrist of patient and provided with a sequence of holes, characterized in that said flexible strip is made of soft material and it is

- 3 -

provided with cross-sectional pre-fracture lines between one and the other of the aforesaid holes and said tag part is fastened to one end of said flexible strip and it is made of two parts that are closable by folding and are snap fastenable in a permanent way, between which parts the other end of the flexible strip is passed and locked by means of at least a pin that is inserted
5 in one of said holes.

The wrist-band according to the invention has therefore the prerogative of being comfortable for the patient, due to the soft material being used for the flexible strip, and not to require any cutting tool for the removal of the exceeding strip, since the pre-fracture lines that are present between one hole
10 and the other allow to carry out the same removal manually.

The characteristics and the advantages of the present invention will become evident from the following detailed description of an embodiment thereof that is illustrated as a non-limiting example in the enclosed drawings,
15 in which:

Fig. 1 shows a plan view of a wrist-band according to the invention before its application to the wrist of a patient;

Fig. 2 shows the tag part of said wrist-band in magnified longitudinal section according to line II-II of Fig. 1;

20 Fig. 3 shows the tag part of said wrist-band in magnified cross section according to line III-III of Fig. 1;

Fig. 4 shows in perspective view the same wrist-band in a condition fastened to the wrist of a patient, before the removal of the exceeding part of the flexible strip;

25 Fig. 5 shows in perspective view the same wrist-band after the removal of the exceeding part of the flexible strip.

The wrist-band illustrated in the drawings, where it is indicated as a whole by the reference number 1, comprises a tag part 2 and a flexible strip part or strap 3 with a sequence of equally distanced holes 4 that are
30 intervalled from the cross-sectional pre-fracture lines 5. The two parts 2 and

- 4 -

3 are made of a single piece of non rigid plastic material, for instance of rubber material.

As shown in particular in Figures 1-3, the tag part 2 is made of two parts 6 and 7, respectively bottom and top, that are closable by folding by means of rotation around the axis of a foldable plastic coupling tape or hinge 8 parallel to the strip 3. The bottom part 6, from which the flexible strip 3 extends, has a external face destined to rest on the wrist of the patient, while the top part 7 has an external face destined to the support of an identification code 9 (Figures 4 and 5) that contains the main data of the patient to whom the wrist-band is destined and is memorised in a microchip 10 below. The internal face of the bottom part 6 has a pair of pins 11 that are arranged one after the other in the same direction of the holes 4 of the flexible strip 3 and have a mutual distance equal to twice the distance between the holes 4. The internal face of the top part 7 has in turn a pair of holes 12 that are arranged so as to receive, in parts 6 and 7 closed by folding, the aforesaid pins 11 of the bottom part 6. Finally from the internal face of the top part 7 two hook elements 13 extend toward the bottom which are destined to fit in a permanent way into two corresponding cavities 14 of the internal face of the bottom part 6.

As shown in Fig. 4, the wrist-band 1 is applied to the wrist of a patient, schematised in 15, by laying onto the same the external face of the bottom part 6, by folding the flexible strip 3 around the same wrist, thus inserting the two pins 11 of the bottom part 6 of the tag part 2 in an appropriated pair of holes 4 of the flexible strip 3, by closing the top part 7 of the tag part 2 on the bottom part 6 so that the two holes 12 of the first receive the two pins 11 of the second, and finally by locking the two parts 6 and 7 to each other in a permanent way by means of fitting of the hook elements 13 in the cavities 14. In this way the flexible strip or strap 3, and the wrist-band 1 with it, get coupled to the wrist of the patient in a permanent way with the identification code 9 well visible until the term of the hospitalisation. The terminal part of

- 5 -

flexible strip 3 that, when the wrist-band is fastened, extends outside the tag part 2 is eventually removed manually by using to such purpose the appropriated pre-fracture line 5 (Fig. 1).

CLAIMS

1. Identification wrist-band for patients, suitable to be used in hospitals, nursing homes and similar, comprising a tag part (2) destined to the support of an identification code (9) of the patient and a part with flexible strip (3) that is fastenable in a permanent way around the wrist of patient and supplied with a sequence of holes (4), characterized in that said flexible strip (3) is made of soft material and it is provided with pre-fracture cross-sectional lines (5) between one and the other of the aforesaid holes (4) and said tag part (2) is attached to one end of said flexible strip (3) and it is made up of two parts (6, 7) that are closable by folding, in a permanent way, between which parts the other end of the flexible strip (3) is passed and fastened by means of at least one pin (11) inserted in one of said holes (4).

2. Wrist-band according to claim 1, characterized in that said parts (6, 7) of the tag part (2) are made up a bottom part (6) that is integral with the flexible strip (3) and having an external face destined to be laid on the wrist of the patient and of a top part (7) foldable onto the bottom part (6) by rotation around the axis of a plastic coupling tape or hinge (8) that is parallel to said flexible strip (3) and has an external face destined to the support of said identification code (9).

3. Wrist-band according to claim 2, characterized in that said identification code (9) is memorised into a microchip (10).

4. Wrist-band according to claim 2, characterized in that said bottom part (6) of said tag part (2) has an internal face that is provided with at least one pin (11) that is insertable in one of said holes (4) of the flexible strip (3) and said top part of the tag part (2) is provided with at least one hole (12) arranged so as to receive, with said bottom (6) and top (7) parts closed by folding, said pin (11) of the bottom part (6).

5. Wrist-band according to claim 2, characterized in that said foldable parts (6, 7) of said tag part (2) are fastenable to each other in condition by means of respective fastening means (13, 14) that are engageable with each

- 7 -

other in correspondence of said internal faces.

11

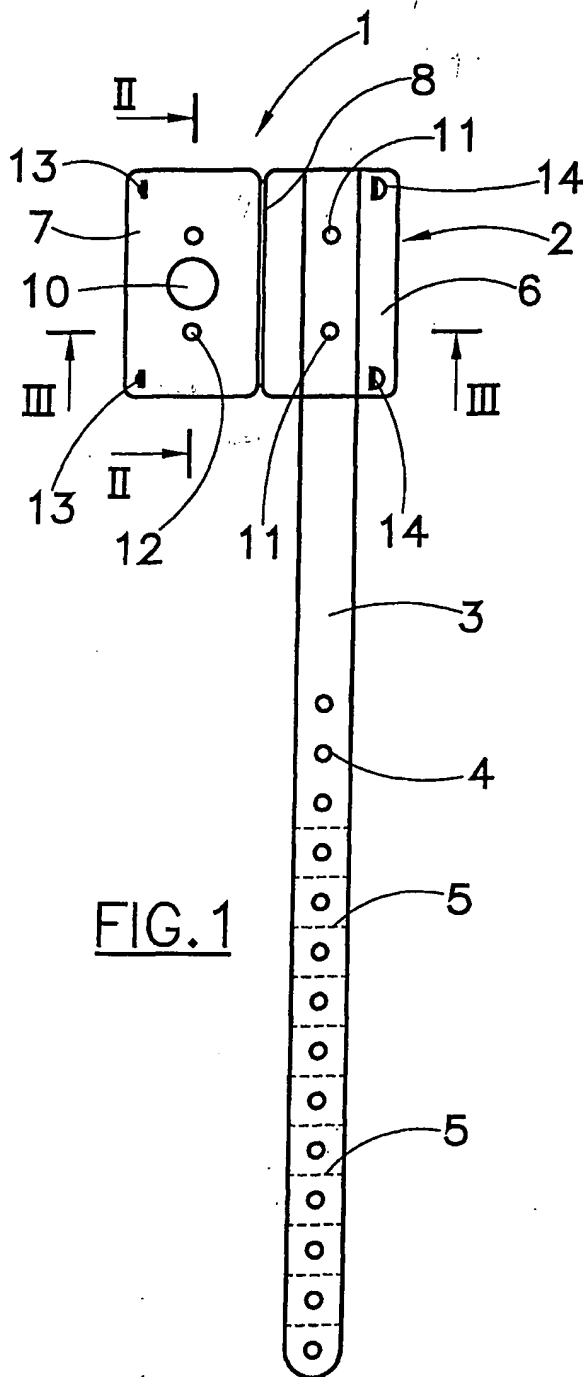


FIG. 1

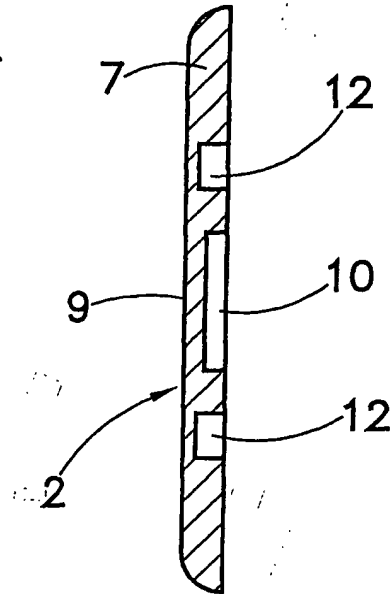


FIG. 2

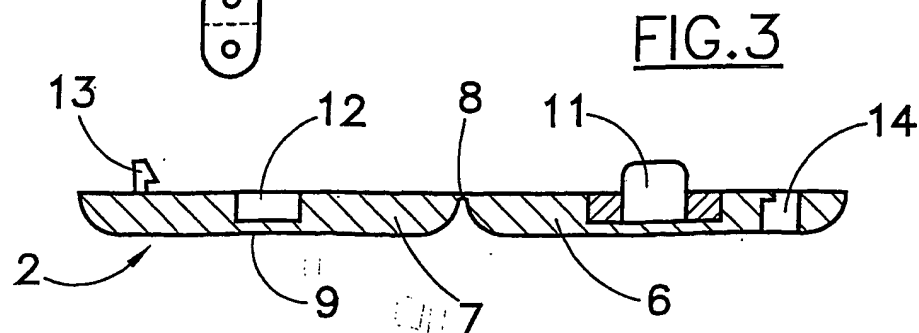


FIG. 3

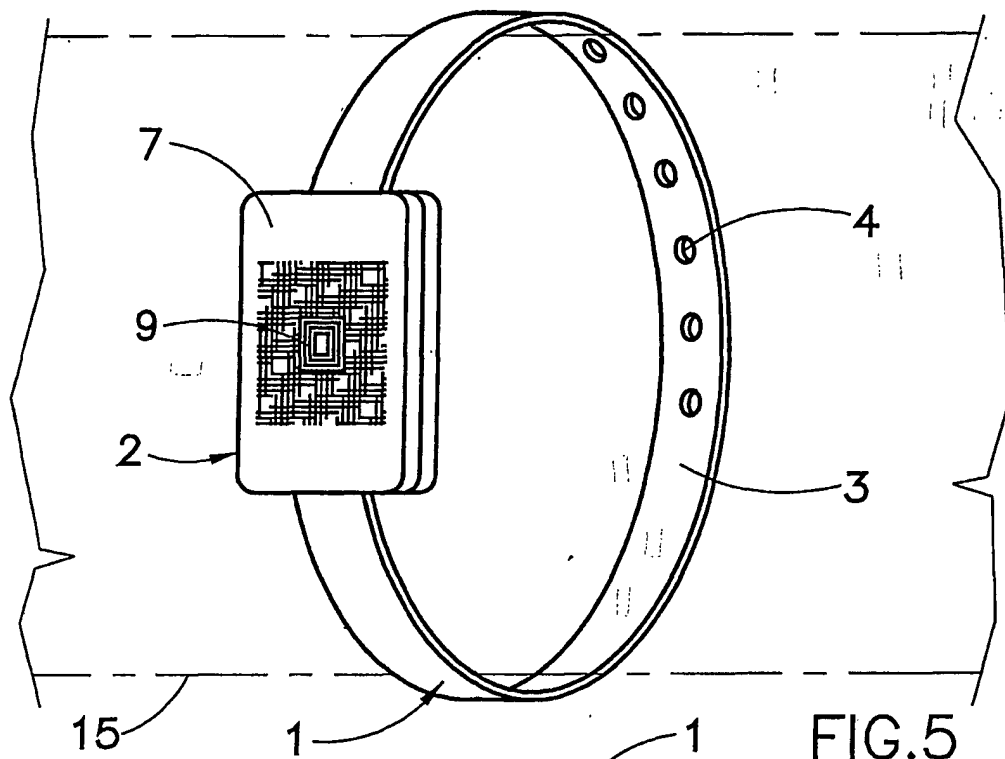


FIG. 5

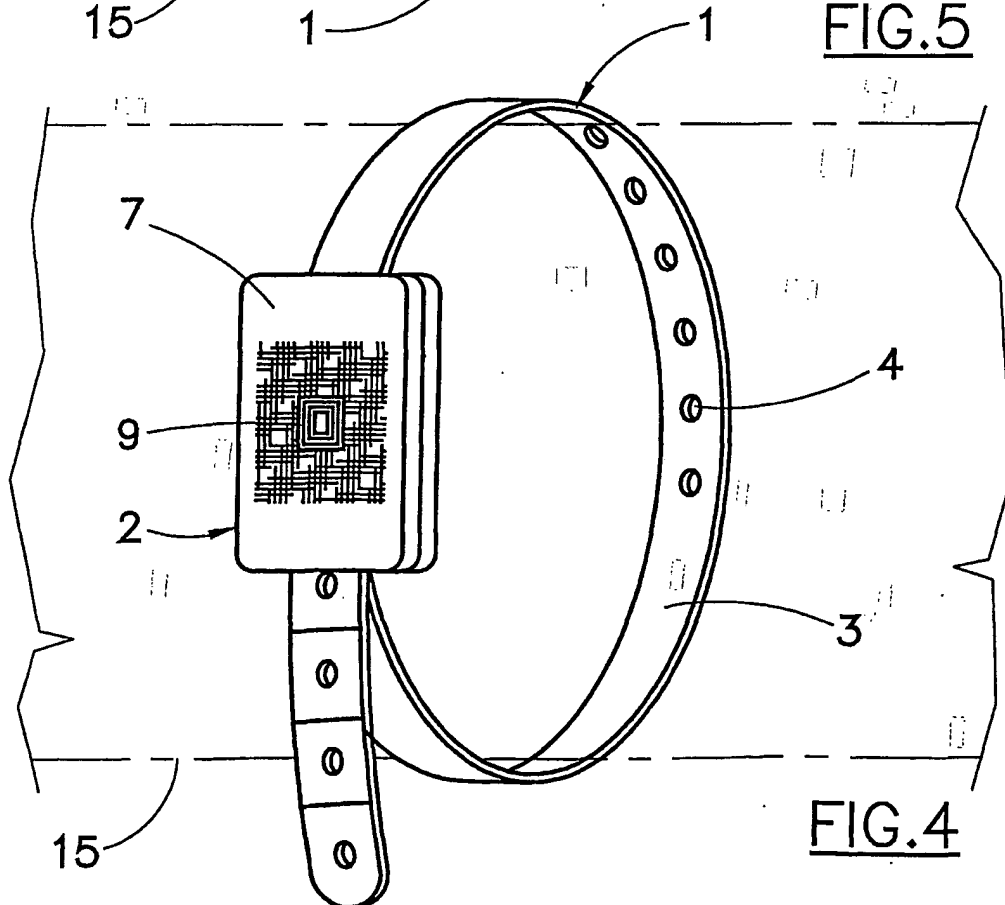


FIG. 4

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 01/06464

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G09F3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3 818 897 A (SMITH W) 25 June 1974 (1974-06-25) cited in the application	1
A	column 4, line 40 -column 5, line 19; figures 1-4	2,4,5
Y	US 4 956 931 A (SELKE GEORGE V ET AL) 18 September 1990 (1990-09-18) column 6, line 3-45; figures 2-4,7	1
A	US 5 883 576 A (DE LA HUERGA CARLOS) 16 March 1999 (1999-03-16) column 7, line 38-67; figures 1,2	1,3
A	GB 2 294 025 A (HAYES PETER ROBERT) 17 April 1996 (1996-04-17) page 3; figures 1,2	1
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

5 November 2001

Date of mailing of the international search report

12/11/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl
Fax: (+31-70) 340-3016

Authorized officer

Jandl, F